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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,327	05/01/2001	Akiyoshi Osakada	010601	2251

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EXAMINER

MITCHELL, JAMES M

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 01/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/845,327

Applicant(s)

OSAKADA, AKIYOSHI

Examiner

James Mitchell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

1. This office action is in response to the application filed May 1, 2001.

Drawings

2. Figure 4B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (6,316,826) in view of the admitted prior art (APA).
5. Yamamoto discloses a high frequency package (Line 8, Column 1), a first metal plate (4) with a fixing cut out (Lines 24-25, Column 6) and having a hollowed portion at the center of said plate (cavity region of Item 4 shown in Fig.7), a second metal plate (2) fitted in the hollowed portion of said first plate jointed end to end, with a ceramic frame (5) wherein the cavity defined by second metal plate and ceramic frame has a semiconductor mounting portion on bottom of said cavity, said first metal of Cu-W (Lines 8-9, Column 7) inherently in close thermal expansion with said ceramic (as admitted by applicant Page 2, Lines 3-5), and said second metal member of high thermal

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conductivity possessing an elevated degree of heat sinking characteristics (Lines 20-23, Column 1).

6. Yamamoto does not show fixing cutouts defined at both ends of said metal plate, however it would have been obvious to one of ordinary skill to form cutouts at the ends of the metal plate, since cutouts at the ends of plates are well known in the art in order to fix ceramic packages by screws as is shown by the admitted prior art (Fig. 4A; Page 2, Lines 16-20).

7. With respect to claim 1, the applicant's claim that "the plate is brazed" is a product by process.

8. "Even though product -by- process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)

9. A "product by process" claim is directed to the product per se, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972); *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); *In re Fessmann*, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product per se which must be determined in a "product by, all of" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "product by process" claims or not.

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Note that Applicant has the burden of proof in such cases, as the above case law makes clear.

10. Claims 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto and the admitted prior art (APA) as applied to claim 1 and further in view of Berstedt et al. (U.S 2001/0004132).

11. The prior art does not disclose the dielectric ceramic being across the first and second metal plates.

12. However, Berstedt utilizes a dielectric frame on a first and a second metal plate (Fig. a-c; Lines 9-12, Paragraph 0025).

13. It would have been obvious to modify the frame of Yamamoto and the admitted prior art such that the frame is attached to the first and second metal plate in order to reduce the risk of harmful stress (Page. 3, Lft.Lines 3-6) associated with thermal expansion.

14. With respect to claim 2, the applicant's claim that "the plate is brazed" is a product by process. See paragraphs 8 and 9.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (6,316,826) and the admitted prior art (APA) as applied to claim 1 and further in view of Nebe (U.S 5,167,869).

16. The prior art discloses the elements stated in paragraphs 5 and 6, and further suggest in Yamamoto that the first metal can be Kovar (Line 5, Column 7).

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17. Neither Yamamoto nor the admitted prior art disclose that the second metal is comprised of Cu-Mo-Cu alloy, however Nebe utilizes a Cu-Mo-Cu metal layer (Line 64, Column 6).

18. It would have been obvious to one of ordinary skill to form the second metal plate out of Cu-Mo-Cu alloy, since it is a functionally equivalent heat dissipation material that is well known in the art in the formation of heat sinks as shown by Nebe (Lines 64-65, Column 6).

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoshio (JP 2000049253), Chanchani ("... Thermal Expansion of Ceramics and Metals..."), Derryberry (U.S 4,907,067) and Shimuzu (U.S 4,546,478).

The prior art discloses in Yoshimo the use of a hollowed first metal base jointed with a second metal, in Chanchani the use of a copper-molybdenum alloy with expansivity close to that of ceramic, in Derryberry the use of a dielectric brazed to a metal, and in Shimizu the use of copper for heat dissipation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Mitchell whose telephone number is (703) 305-0244. The examiner can normally be reached on M-F 10:30-8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (703) 305-4940. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

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305-3432 for regular communications and (703) 305-3230 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

jmm
December 30, 2001



Stephen D. Meier
Primary Examiner